hence perforation was considered probable, though it was noted that the pain was in the left side and that there was not marked rigidity of the right side.

Dr. John B. Deaver asked if a differential leukocyte count had been made in the case reported by Dr. Allen. He operated in one case which proved to be typhoid hæmorrhage, the blood being confined to the intestine. There was absolute rigidity. The small intestine was found to be filled with blood and was not opened. The patient recovered.

Dr. William L. Rodman cited a case in which typhoid perforation was diagnosed by two medical colleagues, who insisted upon operation, although he did not favor it. When the abdomen was opened hæmorrhage was found in the gut, but no perforation. The patient recovered from the operation, but died from a second hæmorrhage a number of days later. Autopsy showed there had been no perforation. If one opens the abdomen in these cases he is probably warranted under certain conditions in opening the intestine and searching for the bleeding point, but in general the chances are better if the hæmorrhage be allowed to take its course. There is not a large field for operation in typhoid fever and one is not warranted in opening the gut unless there are adhesions or thin places in the wall make the finding of the bleeding point reasonably sure after the opening has been made.

BONE METASTASES IN CARCINOMA OF THE BREAST.

Dr. Henry R. Wharton read a paper with this title for which see Annals of Surgery for July, page 81.

Dr. Morris Booth Miller described a fracture following operation for carcinoma of the breast in a woman of 40, the thorough operation having been performed. The patient when coming from the seashore, where she was during convalescence, was holding on to the seat to steady herself while standing in a street car. A slight jolt was followed by sharp pain in the arm and examination revealed an oblique fracture of the humerus. This suggested a recurrence, though there was no thickening of the bone and only the signs of an ordinary fracture. Demonstrable metastases occurred and the woman died the following winter.

Dr. John B. Deaver said that Osler in 1902 reported 16 cases of carcinoma of the spine following carcinoma of the uterus or breast.

Dr. William L. Rodman said that bone metastases in breast tumors are not particularly common, yet they are not extremely rare. Personally he has seen three cases. Two were unquestionably scirrhous carcinoma, the third was a sarcoma. In one of the carcinomas the metastastic growth was in the spine, the other in the left humerus, the same side as the primary tumor. The metastasis of the sarcoma was in the right femur six months after operation. The patient was the daughter of a prominent surgeon and had carried a benign growth for years.

Metastasis in sarcoma is more easily understood as the cells are in contact with the wall of the vessels, while in carcinoma the vessels are in the stroma. He has seen many cases of bone involvement in the sternum, but there the reason is very plain. Of indirect infection he has seen only the two cases, it not being difficult to see how metastasis to the spine occurs. The retromammary lymphatics drain through the second and fourth interspaces and then run along the course of the intercostal arteries to the thoracic duct. In this way spinal metastases occur. Dr. Wharton said that primary cancer of the bone is rare; he questions if it ever occurs, as epithelial cells are not found in bone. Such tumors are really endotheliomata or sarcomata. Bone metastases are important as they are never located before operation. The same chains of lymphatics as previously mentioned also explain metastases to the liver; this being the most common site of the secondary growths.

Dr. John B. Roberts saw eight years ago a case similar to that reported by Dr. Wharton. He was not able to determine if a growth was present, but regarded it as probably a case of spinal metastasis.

FIBROMA OF THE GREAT TOE.

Dr. Henry R. Wharton reported the case of a man, aged 50 years, who noticed 12 years before he came under the care of Dr. Wharton a tumor of the right great toe; it was painless, but increased gradually in size. He found it necessary to have the shoe for the right foot made upon a special last to accommodate the increasing bulk of the tumor. A casual inspection of the feet with the shoes on showed no marked difference in their size. Within a few weeks a portion of the tumor had ulcerated and gave him pain, which caused him to apply for relief.

The tumor was a fibroma and was attached to the peri-